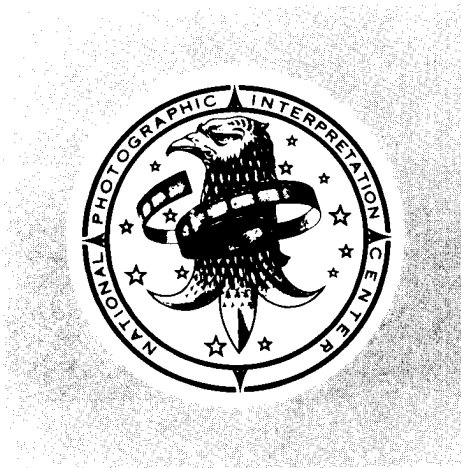


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(See inside cover)



Summary Report

NATIONAL PHOTOGRAPHIC
INTERPRETATION CENTER

PROBABLE TOXIC PROPELLANT-RELATED CONSTRUCTION ACTIVITY, FAUSTOVO AEROSPACE RESEARCH AND DEVELOPMENT FACILITY USSR (TSR)



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**PROBABLE TOXIC PROPELLANT-RELATED CONSTRUCTION
ACTIVITY, FAUSTOVO AEROSPACE RESEARCH AND
DEVELOPMENT FACILITY, USSR (TSR)**

(TSR) Analysis of the missile propulsion test area at Faustovo Aerospace Research and Development Facility, USSR, [] indicates that four probable toxic exhaust containment/treatment systems are under construction. All of these systems serve a new horizontal test building. Construction of several protection systems at this facility indicates that the Soviets are preparing to test more toxic propellants or are instituting greater industrial safety standards, or both.

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(TSR) The horizontal test building was first observed under construction in August 1972 and is now in the late stage of construction (Figure 2). It has an assembly/test support section [] and an administration/engineering section on the south side, [] At least five test positions are on the north side of the building. Four of these positions are marked by extensions of various lengths and widths.

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(TSR) The first protection system consists of stacks installed on the roof of the horizontal test building. The two outermost test positions have stacks that appear to have gas-scrubbing capabilities. On the westernmost test position two of these stacks are standing side by side and extend [] above the building. The stacks extend out of a common probable chamber on the roof, and each has an external framework. Another pair of these stacks is on the roof of the easternmost test position. A third, smaller diameter, possible stack is just in front of this pair. The tops of these stacks are [] above the roof. A possible exhaust scrubber is also under construction between the two western extensions and just in front of the test building. The assembly/test support section of the building is served by two banks of five exhaust stacks each. Venting similar to this is present on the horizontal test building in the western end of the facility, although it does not appear to be as extensive.

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(TSR) The second protection system is being installed to serve the easternmost test position of the new horizontal test building. It consists of an underground, probable waste containment tank, 14 meters in diameter, and an aboveground probable storage tank, 9 meters in diameter and 5 meters high. The probable waste containment tank is in front of the easternmost test position and the probable storage tank is just to the east of the containment tank. This waste containment system may be a simple water deluge system, which is common to most test facilities, or it may be part of a more exotic waste treatment facility which uses caustic soda or a similar reagent to render toxic exhaust gases inert.

(TSR) The third is a large blower system that is being installed to serve the entire eastern end of the facility. It consists of a compressor building (Figure 1) and at least three separate blower lines. The blower lines serve a variety of research buildings, including the horizontal test building, a probable assembly/checkout building, two rail-served probable propellant receiving/storage buildings, a laboratory building, and a vertical test stand. The blower lines [] and serve the horizontal test building via two manifolds on the roof.

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(TSR) The fourth probable protection system consists of a large number of probable pressure bottles which have been installed just south of the horizontal test building. There are five banks of bottles, each bank contained within a rack, 17 by 10 meters. Each rack contains four groups of bottles arranged in two rows abreast and 24 deep, yielding 192 bottles per rack and a total of 960 bottles. At this time no connecting link is visible between the bottles and any of the surrounding buildings. Bottles of this type are commonly found at test facilities. They may contain various gases such as helium, nitrogen, or hydrocarbon fuels. Nitrogen is ordinarily used to purge propellant feedlines and test articles, while other gases are used in research and development work on unusual fuel combinations. In addition, hydrocarbon fuels such as propane and butane could be used to burn off some toxic fuels which may be accidentally spilled.

(TSR) The use of toxic fuels in space launch vehicles and ICBMs is common practice in both the Soviet Union and the United States. Previously, research and development work has been conducted on such toxic propellants as unsymmetrical dimethylhydrazine (UDMH), inhibited red-fuming nitric acid (IRFNA), nitrogen tetroxide, fluorine, chlorine pentafluoride, chlorine trifluoride, and ammonia. In addition, other propellants commonly used in missile propulsion research are dangerous and require special handling to avoid injury to personnel and damage to research facilities. Propellants that fall into this category would include liquid hydrogen, liquid oxygen, and hydrazine.

(TSR) The exact type of propellant to be tested here cannot be determined at this time. However, since there are more redundant personnel/environmental protection systems than are usually seen or expected, it is likely that the propellants to be tested here will be more toxic than those previously used.

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